CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE
ON DISARMAMENT

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FINAL VERBATIM RECORD OF THE FOUR HUNDRED AND TWENTY-EIGHTH MEETING

held at the Palais des Nations, Geneva,
on Thursday, 14 August 1969, at 10.30 a.m.

Chairman: Mr. J.F. LEONARD (United States)

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PRESENT AT THE TABLE

Argentina:	Mr. C. ORTIZ de ROZAS
	Mr. A.F. DUMONT
	Mr. O. SARACHO
Brazil:	Mr. S.A. FRAZAO
	Mr. P. CABRAL de MELLO
	Mr. L.F. PALMEIRA LAMPREIA
	Mr. M. DARCY de OLIVEIRA
Bulgaria:	Mr. K. CHRISTOV
	Mr. M. KARASSIMEONOV
	Mr. I. PEINIRDJIEV
Burma:	U KYAW MIN
Canada:	Mr. G. IGNATIEFF
	Mr. R.W. CLARK
	Mr. J.R. MORDEN
Czechoslovakia:	Mr. T. LAHODA
	Mr. M. VEJVODA
	Mr. J. CINGROS
Ethiopia:	Mr. A. ZELLEKE
Hungary:	Mr. I. KOMIVES
	Mr. I. SARKADI
	Mr. J. PETRAN
India:	Mr. M.A. HUSAIN
	Mr. N. KRISHNAN
	Mr. K.P. JAIN

Italy:	Mr. R. CARACCIOLO
	Mr. F.L. OTTIERI
	Mr. R. BORSARELLI
	Mr. U. PESTALOZZA
Japan:	Mr. K. ASAKAI
	Mr. Y. NAKAYAMA
	Mr. M. OGISO
	Mr. Y. KAWAKITA
Mexico:	Mr. J. CASTANEDA
	Miss E. AGUIRRE
	Mr. R. VALERO
Mongolia:	Mr. M. DUGERSUREN
	Mr. Z. ERENDOO
Morocco:	Mr. A.T. BENHIMA
	Mr. A. CHERKAOUI
	Mr. A.A. KHATTABI
Netherlands:	Mr. H.F. ESCHAUZIER
	Mr. E. BOS
Nigeria:	Alhaji SULE KOLO
	Mr. L.A. MALIKI
Pakistan:	Mr. A. SHAHI
	Mr. K. AHMED
Poland:	Mr. A. CZARKOWSKI
	Mr. A. SKOWRONSKI
	Mr. H. STEPOSZ
	Mr. R. WLAZLO

Romania:	Mr. O. IONESCO
	Mr. C. GEORGESCO
	Mr. A. SASU
	Mr. C. MITRAN
Sweden:	Mr. A. EDELSTAM
	Mr. I. VIRGIN
	Mr. R. BOMAN
	Mr. U. ERICSSON
Union of Soviet Socialist Republics:	Mr. A.A. ROSHCHIN
	Mr. R.M. TIMERBAEV
	Mr. V.V. SHOUSTOV
	Mr. V.B. TOULINOV
United Arab Republic:	Mr. H. KHALLAF
	Mr. O. SIRRY
	Mr. Y. RIZK
	Mr. M. ISMAIL
United Kingdom:	Mr. I.F. PORTER
	Mr. W.N. HILLIER-FRY
	Mr. R.I.T. CROMARTIE
	Mr. M.E. HOWELL
United States of America:	Mr. J.F. LEONARD
	Mr. A.F. NEIDLE
	Mr. W. GIVAN
	Mr. R. McCORMACK
Yugoslavia:	Mr. M. BOZINOVIC
	Mr. M. VUKOVIC
Special Representative of the Secretary-General:	Mr. D. PROTITCH
Deputy Special Representative of the Secretary-General:	Mr. W. EPSTEIN

1. The CHAIRMAN (United States): I declare open the 428th plenary meeting of the Conference of the Eighteen-Nation Committee on Disarmament.

2. Mr. HUSAIN (India): In continuation of the preliminary views expressed by my delegation at our meeting on 17 April (ENDC/PV.404, paras. 65 et seq.) regarding the prevention of an arms race on the sea-bed, I wish today to speak more specifically about the draft treaties placed before us by the delegations of the Soviet Union (ENDC/240) and the United States (ENDC/249). While doing so I should like, however, to reiterate the conviction of my delegation that, in keeping with the main task of this Committee to conclude a treaty on general and complete disarmament under effective international control, the priority in our negotiations should be given to measures aimed at halting the nuclear arms race and at the achievement of nuclear disarmament, and that the guiding consideration in all our efforts should be actual disarmament and not merely non-armament.

3. While prior to 23 May we discussed at some length the Soviet draft treaty on the sea-bed, now, in the resumed session since 3 July, we have been discussing also the United States draft treaty. My delegation has heard with close attention the views expressed by various delegations about the three principal issues involved: namely the nature of the prohibition, the limits beyond which the prohibition should apply, and the question of verification to ensure compliance with the provisions of the treaty. There are several other issues, of which some have been referred to in the United States draft treaty, some have been mentioned in the Soviet draft treaty, and some have been raised by other delegations.

4. My delegation agrees with the view expressed by some delegations that issues relating to consequential provisions can be gone into after agreement has been reached on the three basic issues, without a serious consideration of which it is not possible to proceed with an examination of the detailed provisions of the treaty. I shall therefore refrain at this stage from expressing views about those other matters.

5. On the fundamental question of the nature of the prohibition to be incorporated in the treaty, we have in the drafts before us two widely-differing views. In the United States draft the prohibition is confined to "nuclear weapons or other weapons of mass destruction or associated fixed launching platforms" (article I); but the Soviet draft goes much further and prohibits also the setting up or the maintenance of "military bases, structures, installations, fortifications and other objects of a military nature" (article 1).

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6. Each side has criticized the other either for going too far or for not going far enough. It is interesting to observe that for sustaining those two widely-differing viewpoints both sides have relied on the same criteria to arrive at different conclusions. The United States, for example, maintains that the prohibition should be restricted to nuclear weapons and other weapons of mass destruction so as to "reduce the verification problem to manageable proportions" (ENDC/PV.414, para. 6), and that if we were to

> "... try to prohibit the placing in the sea-bed and ocean floor of all 'objects of a military nature', we would raise problems of verification which would be insuperable..." (ENDC/PV.411, para. 23).

Increasing peaceful activity, commercial, scientific and other research, it is added, necessitate less onerous and frequent verification than would be required by the complete demilitarization of the sea-bed.

7. The Soviet Union, on the other hand, is of the view that if we were to limit the prohibition to weapons of mass destruction the verification problem would become more complicated. The Soviet Union has added:

> "Indeed, if the ban covered only certain types of activity, the controlling party would be faced in each specific case with the question of whether the object concerned had to do with prohibited or permitted activities." (ENDC/PV.400, para. 23)

8. The second argument advanced by the United States against total demilitarization is that it would be a threat to the security of States, as under a total ban systems of detection and surveillance of submarine traffic would be prohibited as constituting military use even though such systems were essential purely for self-defence. Furthermore, the United States representative has stated:

> "... some non-nuclear but very clearly military uses of the sea-bed are strictly defensive, are presently essential to our security and that of others and therefore must not be subject to treaty prohibitions." (ENDC/PV.421, para. 36)

9. The Soviet Union, on the other hand, maintains that the security of States demands a total ban because tracking systems for self-defence against submarines can be set up within the twelve-mile zone, and those required to be established beyond that zone cannot be for self-defence. As regards defensive weapons, it is the view of the Soviet delegation that -

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"... the difference between defensive and offensive weapons is very relative, and that so-called defensive weapons can also be used for offensive purposes." (ENDC/PV.409, para. 25)

10. The third argument advanced by the United States is that the main or major threat to the peaceful use of the sea-bed is from nuclear and other weapons of mass destruction, and that therefore in the task of preventing an extension of the arms race to the sea-bed other types of military activities need not be considered, because -

"It is our belief ... that realistic possibilities do not now and will not soon exist for conventional military uses of the sea-bed that would be threatening to the territories of States. Nor do we believe that there are non-nuclear military uses of the sea-bed that could in the next few years trigger an arms race." (ENDC/PV.421, para. 35)

11. The Soviet Union, on the other hand, is of the view that limiting the prohibition to nuclear weapons would "open the way for the unleashing of a conventional arms race" and "constitute a kind of legalization of military activities by States in this area so far as conventional arms are concerned." (ENDC/PV.400, para. 14). The Soviet representative has further stated:

"... we do not see any grounds for limiting the problem of prohibiting military activities on the sea-bed to prohibition of the emplacement on the sea-bed and the ocean floor only of such weapons as could be used for striking against the territories of States. We believe that weapons which may be designed to strike at ships and to disrupt sea communications with a view to interrupting economic and trade relations between States represent no less a danger to peace and world security. We must consider the question of prohibiting the emplacement of both nuclear and conventional weapons on the sea-bed in its entirety without trying to introduce any artificial limitations." (ENDC/PV.423, para. 45)

12. My delegation, after hearing these arguments and counter-arguments to sustain the differing views about the nature of the prohibition on which the treaty is to be based, feels that these differences seem in fact to arise, apart from the fear of commercial espionage, principally from the different naval-warfare strategies of the sponsors of the two drafts before us. While it is true that in the present stage of technological development in the use of the sea-bed it is only these two Powers which are most

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concerned with economic exploitation and the arms race on the sea-bed, it must be acknowledged that what we are dealing with is a treaty of universal applicability and of unlimited duration. This means that while we should, of course, take serious cognizance of the preoccupations of these two Powers, we should also take into account the requirements of other maritime Powers which in the years to come will make large technological advances in the use of the sea-bed, as well as the security requirements of the vast majority of the countries of the world.

13. Our clear objective in regard to such a treaty is, as laid down by United Nations General Assembly resolution 2467 (XXIII), that the sea-bed beyond the limits of present national jurisdiction should be reserved exclusively for peaceful purposes, and that the exploitation of its resources "should be carried out for the benefit of mankind as a whole, ... taking into account the special interests and needs of the developing countries". Taking these factors into consideration, my delegation has come to the conclusion that, while the prohibition defined in article I of the United States draft is the barest minimum which must anyhow be included in the treaty, we feel, sharing the view of a number of other delegations so well explained by the Canadian delegation in its statement at our meeting on 31 July (ENDC/PV.424, paras. 18 et seq.) that the treaty should not limit its prohibition to weapons of mass destruction only but should, in principle, extend to all weapons, and to military bases and fortifications and to other installations and structures of a military nature which could be used against the territory, the territorial sea or air space of the coastal States or against the peaceful activities of coastal States in the exercise of their national jurisdiction.

14. The prohibition would not, however, cover means of communication and navigation, devices capable of detecting the approach to the shores of ships or submarines, and other defence measures deemed necessary. The basic principle, in the view of my delegation, should be the essential security interests of coastal States and particularly the security needs of non-nuclear-weapon States with long coastal lines difficult to defend. It is a cardinal principle of our negotiations in this Committee that all measures of disarmament should be balanced so that security is ensured equally for all States (ENDC/5).

15. As regards the area to be covered by the prohibition contained in the treaty, it is generally agreed that it should be as large as possible; but views differ as to what constitutes "as large as possible". We have the Soviet proposal that it should consist

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of the area beyond a horizontal distance of twelve miles from the coast while the United States has suggested a distance of three miles. We have also the Japanese suggestion that, if the prohibition is to concern itself with only nuclear weapons and other weapons of mass destruction, the distance should be zero miles (ENDC/PV.420, para. 14); and the Canadian suggestion that there should be a defensive zone of 200 miles (ENDC/PV.424, para. 23). Then there is the Swedish suggestion for seeking a compromise between three miles and twelve miles by providing for the nine miles in between these two limits a type of prohibition different from that applicable beyond twelve miles (ENDC/PV.422, paras. 46 et seq.).

16. It is the considered view of the Indian delegation that, taking every aspect of the matter into consideration -- particularly the need to have as large an area as possible covered by the treaty and, equally, the need not to infringe unduly the existing sovereign rights of coastal States -- a twelve-mile limit would be the most appropriate and also likely to be more generally acceptable than any other limitation of distance smaller or larger than twelve miles.

17. In favour of three miles it has been said that three instead of twelve miles would add two million square miles to the area from which the nuclear arms race would be eliminated (ENDC/PV.414, para. 10). This line of argument is difficult to appreciate because, considering the nature of delivery vehicles which carry nuclear weapons and other weapons of mass destruction, a distance of nine miles would not make any material difference. Furthermore, a reduction of the distance from twelve miles to three miles would create more problems than it would solve. While thirty-one States have a territorial sea limit of three miles, seventy-three States have a territorial sea limit of more than three miles, and the bulk of those seventy-three States have a limit of twelve miles.

18. For a large number of States, then, difficulties would arise in regard to their security, and also problems relating to verification and control under the treaty. It is difficult to envisage States with a territorial sea limit of twelve miles agreeing to accept restrictions upon their sovereignty in the outer nine-mile region of their territorial sea, or to allow the carrying out of observation and inspection procedures on this part of their territorial sea. In this respect we agree with the view expressed by the Soviet delegation that -

> "Since many States possess a twelve-mile zone of territorial waters, if a narrower coastal sea zone were established for the purposes of the treaty

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it would be necessary to obtain the permission of the coastal State for foreign ships to enter those waters or for foreign aircraft to fly over that zone for purposes of control. That could, of course, give rise to difficulties for the unhindered exercise of control ..." (ENDC/PV.423, para. 55)

19. In favour of three miles it has also been said that such an arrangement would avoid questions relating to -

"... the status of the zone that would exist between a twelve-mile limit, for example, and the outer limits of territorial waters that were less than twelve miles." (ENDC/PV.414, para. 10)

My delegation finds it difficult to understand this view, since for a coastal State which claimed only three miles as its territorial waters the zone of nine miles beyond its national sovereignty would have a status no different from the status it has at present. If it is apprehended, as was pointed out by the representative of Canada at our meeting on 13 May (ENDC/PV.410, para. 7), that this intermediate nine-mile zone could be open to unrestricted military activity by any State, and not only to the coastal State, then a provision could be introduced in the treaty to safeguard against such a contingency. Furthermore, if by adopting a three-mile limit it is intended to avoid for thirty-one States the question of the status of the intermediate zone, it would raise even more varied and difficult problems relating to verification for no less than sixty-five States whose territorial sea claims vary between four miles and twelve miles.

20. There are two other aspects of the delimitation of the area of prohibition under the treaty on which, we believe, there is fortunately by now general agreement. First, whatever horizontal distance from the coast might be agreed upon for the zone excluded from the prohibition under the treaty, it would be specifically and entirely for the purposes of this treaty and would not in any way prejudice or interfere with existing national jurisdiction or rights and claims pertaining to the territorial sea or the contiguous zone or the continental shelf. This has not been stated in the Soviet draft but has been provided for in article II(3) of the United States draft. A clear provision in this regard would seem to be necessary. Second, as regards the manner in which the distance in question is to be measured, practically all delegations share the view that it should be measured from the same baselines as are provided for

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in the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone.[1] This has been mentioned in article 3 of the Soviet draft and is acceptable to the United States delegation subject to agreement being reached "on the appropriate interpretations" (ENDC/PV.414, para. 11). We hope that agreement will soon be reached on those interpretations.

21. As regards the third related question of verification of the prohibition, the relevant provisions contained in the two drafts before us vary both in their intent and in their scope. The Soviet draft is based on the concept of reciprocity and access, and the United States draft is based on the concept of observation, consultation and co-operation. The first question that arises is: who has the right to verify compliance with the provisions of the treaty? As a result of lengthy discussions here it is now generally agreed that the concept of reciprocity in the sense of bilateral arrangements does not represent a reasonable or acceptable basis for verification, and that this right should be available to all parties to the treaty without discrimination. This is not provided for in the Soviet draft but is implied in the United States draft. It is the view of my delegation that it would be necessary to state this in clear terms in the treaty.

22. The next question concerns the manner in which this right of verification is to be exercised. Clearly, mere observation, consultation and co-operation are not enough, as these three ideas contain no definite commitment to verify the observance of the provisions of the treaty. The right of observation of what is going on on the high seas or under the high seas already exists under present international law applicable to the high seas; consequently article III of the United States draft does not create any new right or obligation under the treaty. Consultation in the sense of one State making enquiries of another State is also the prevailing feature of normal intercourse between nations of the world and does not amount to an innovation for enforcing observance of the treaty.

23. As regards the undertaking to co-operate, article III (1) of the United States draft does not go beyond an undertaking "to co-operate in endeavouring to resolve the questions". It does not say what happens if the endeavour to resolve the questions, which depends entirely on the will of the suspected State, does not result in the

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1/ United Nations Treaty Series, Vol. 516, pp. 205 et seq.

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satisfaction of the party to the treaty which had complained of an infringement of treaty provisions. Any control provision which does not ensure, with necessary safeguards, a reasonable opportunity for access to the structures and installations placed on the sea-bed would in our view be illusory. Unless such a provision were made, those States which have the capacity to make such emplacements on the sea-bed would be placed in a position of advantage and superiority as compared with all the technologically less advanced States.

24. Therefore the United States draft would not ensure freedom from fear in countries with less developed under-sea technology which apprehended that they might be threatened by weapons or military installations in an adjacent area of the sea-bed. This is not a position which my delegation is prepared to accept. I hope, therefore, that the verification article will provide, with necessary safeguards, reasonable access to all emplacements on the sea-bed.

25. A further question is how the right of verification is to be exercised. It is now generally recognized, we feel, that this right could be exercised by a party to the treaty either with its own resources or, if it did not have the capability, with the full or partial assistance of another State. In this connexion it has been stated by the United States delegation that "it is not desirable at this time to spell out explicit provisions -- that is to say, commitments -- for providing third-party assistance." (ENDC/PV.421, para. 49) It has also been argued that no obligation or open-ended commitment could be placed on States to provide third-party assistance, for reasons both of principle and of the tremendous cost and technical difficulties involved in such assistance (ibid., para. 50). The Soviet delegation seems to agree with this view (ENDC/PV.423, para. 36). Those of us who have insisted on the right of each party to the treaty to carry out verification with the full or partial assistance of another State have suggested, not that parties to the treaty should be placed under an obligation to assist, but only that the right to seek such assistance from parties willing to assist should be recognized and that this should be clearly provided for in the verification article. This is an essential provision for the technologically less advanced countries which form the vast majority of the countries of the world.

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26. In this context some of us have suggested international means of verification to ensure the strict observance of the provisions of the treaty. My delegation has noted that the United States delegation has expressed the view that it regards a special international verification organization as both premature and wasteful of resources because it would amount to setting up an organization equipped to perform tasks which we are not ready to undertake and of which we have so little experience (ENDC/PV.421, para. 48). The Soviet delegation agreed with this when it said:

> "The use of international means of verification would greatly complicate the problem of control, and the control machinery itself would most probably be cumbersome and inflexible. It should also be noted that the adoption of an international system of control would require substantial funds and appropriate personnel that could be used for other, more urgent needs." (ENDC/PV.409, para. 45)

27. While my delegation fully appreciates the concern of the sponsors of the two drafts before us about technical difficulties and financial costs, it is not clear to us why, if the existing technological "know-how" and capacity are adequate for emplacing structures and installations on the sea-bed, they should not also be adequate for verifying what is emplaced. As regards the question of expense, a viable procedure could be devised which would not entail inordinately large expenditure. In this connexion my delegation finds the suggestion made by the Canadian delegation at our meeting on 31 July for organizing verification through the United Nations (ENDC/PV.424, paras. 29, 30) interesting and would commend it for most serious consideration by this Committee. In the view of the delegation of India, the principle of verification through suitable international machinery or agency or arrangement is essentially sound and would go very far in the direction of removing suspicions, lessening tension and creating an international atmosphere of trust. The Canadian suggestion shows how this could be done.

28. Before concluding my remarks on the subject of verification, it is necessary to state that my delegation agrees with the view expressed by some delegations that the treaty must recognize that coastal States have rights of national sovereignty and national jurisdiction in respect of areas contiguous to the territorial sea, principally the continental shelf. If a party to the treaty wishes to proceed with verification outside the twelve-mile zone but within areas of national jurisdiction of the coastal

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State, such verification must obviously be undertaken in consultation with the coastal State and, if it so desires, under its own observation.

29. In conclusion I should like to reiterate, as some of my colleagues have already done, the need for making some definite advance in our negotiations on the sea-bed treaty. Nearly five months have passed since we first began to exchange views on this subject; and while the wide and far-reaching discussions we have had have been valuable and illuminating, the sad fact is that on all the three basic issues on which the treaty is to be based there is as yet no agreement. Indeed, the wide divergence of views on the very nature of the prohibition to be included in the treaty is as sharp and clear as it was on the first day when we began our deliberations on this subject. If this situation continues during the current month, we shall go to the twenty-fourth session of the General Assembly empty-handed except that there would be this time a larger number of empty hands than there were last year. It is therefore the hope of my delegation that the sponsors of the two draft treaties before us will take serious note of this situation and consider how differences could be bridged and agreement reached. I have no doubt that, like my delegation, all other delegations are more than anxious to render every possible assistance to achieve this worthy end.

30. Mr. ASAKAI (Japan): First of all, I should like to associate myself with previous speakers in extending a heartfelt welcome to the representatives of Argentina, Hungary, Morocco, the Netherlands, Pakistan and Yugoslavia. It is with pleasure that I see some personal friends among the representatives of those countries. The Japanese delegation looks forward to working closely with them in this Committee in pursuit of our common goals.

31. The purpose of my intervention today is to explain in some detail the views of my Government on the question of the prohibition of chemical and biological weapons. I touched on the basic position of my Government on this subject in my statement in this Committee on 3 July (ENDC/PV.416, paras. 74, 75). As I stated at that time, my Government is of the view that, in order to eliminate the possibility of chemical and biological weapons ever being used, it is imperative that we should prohibit not only the use of these weapons but also their development, production and stockpiling. The earnest desire of the Government and people of Japan to achieve disarmament in the field

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of nuclear weapons is already well known. Our desire to eliminate chemical and biological weapons from military arsenals is no less strong.

32. Most chemical and biological weapons, like nuclear weapons, could be used for the purpose of indiscriminate mass destruction. The effects on mankind of the possible use of these weapons might extend -- again like the effects of nuclear weapons -- over a long period of time. The use of nuclear weapons has already given rise to the problem of sequelae caused by radio-activity which persist over a number of years. We fear that an extensive use of chemical and biological weapons might also have an enduring effect on our ecological environment. Developments in modern science and technology have greatly increased the potential threat of this category of weapons. Effects of chemical and biological warfare on a large scale could be devastating indeed, depriving mankind completely of a habitable environment over quite an extensive area for a long time to come.

33. We value highly the report of the group of experts appointed by the Secretary-General on chemical and bacteriological (biological) weapons (A/7575), which enlightens us with its scientific analysis of the possible effects of the use of these weapons as well as of the economic and security implications of the development, acquisition and possible use of them. We particularly note that the report states in its conclusion as follows:

> "The prospects for general and complete disarmament under effective international control, and hence for peace throughout the world, would brighten significantly if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals." (ibid., para. 376)

Being in full agreement with the view expressed in this passage, the Japanese Government wishes to exert its utmost efforts to bring about an early and effective elimination of these weapons.

34. There are a number of international instruments on chemical and bacteriological weapons. The Hague Declaration of 1899 prohibits the contracting parties from using among themselves projectiles which have the sole purpose of diffusing asphyxiating

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or deleterious gases. The Annex to the Convention concerning the Laws and Customs of Land Warfare signed in 1907 prohibits the use of "poison or poisoned weapons" as well as of "arms, projectiles or material calculated to cause unnecessary suffering". In the Geneva Protocol of 1925 (ibid., p. 117) the contracting parties accept the prohibition of "the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices ... so far as they are not already Parties to Treaties prohibiting such use". They also agree "to extend this prohibition to the use of bacteriological methods of warfare".

35. We now have before us, in addition to those existing instruments, a draft convention on the prevention of biological warfare presented to the Committee on 10 July by the United Kingdom delegation (ENDC/255). Whereas all of the existing instruments prohibit only the use in war of the weapons in that category, the prohibition contained in the United Kingdom proposal is extended to cover development, production and stockpiling as well, as far as biological weapons are concerned. The Japanese delegation welcomes such a comprehensive approach.

36. One of the focal points of our discussion on the United Kingdom proposal has been whether it is appropriate to deal, as proposed, with the prohibition of biological weapons first, leaving chemical weapons somewhat behind. It is true that the report of the Secretary-General points out in paragraphs 21 to 31 that chemical and biological agents regarded as weapons of war differ in certain important respects. But the fact that those two kinds of agents differ in nature would not, in itself, lead us to the conclusion that we should take up biological weapons first and put off the prohibition of chemical weapons until a later stage.

37. From a military point of view, biological and chemical weapons could very well be used in war in a closely interrelated manner. International documents, including the Geneva Protocol of 1925 and the recent United Nations resolutions on this subject, have dealt with these weapons together. We cannot be too conclusive either regarding the demarcation itself between biological and chemical weapons. Bacterial toxins, for example, have been classified in different international instruments and publications either as biological agents or as chemical agents.

38. Looking at the matter from another point of view, it may be difficult to satisfy public opinion by first taking up biological weapons, which have never been used against mankind, while postponing the prohibition of chemical weapons, which caused

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actual disaster in the First World War and will pose serious problems to us in future. We have to conclude that, in view of those factors, it seems to be more appropriate to tackle biological and chemical weapons together rather than separately.

39. In translating that position into practical steps, however, we encounter certain difficulties in relation to the treatment of chemical weapons. The first major difficulty is that the verification of compliance is not an easy matter with regard to the production of chemical weapons. The second difficulty is that of reaching an agreement on the scope of the chemical agents to be prohibited.

40. First let me examine the problem of verification. The United Kingdom proposal contains a formula of verification regarding the use of biological weapons which in essence would be to authorize the Secretary-General of the United Nations to carry out automatically an investigation of his own when requested to do so by a party to the convention which believed that biological methods of warfare had been used against it. The Secretary-General would also be authorized to report the result of such an investigation to the Security Council (article III). We consider that formula as one of the important features of the proposal. We believe that it would be able to function to a significant extent as an effective restraint on the use of biological weapons. We believe also that that formula could be similarly applied to the verification of the prohibition of the use of chemical weapons, and could be expected to function effectively to the same extent.

41. If we turn to the prohibition of the production and stockpiling of those weapons we have to admit that the problem of verification becomes more complex, even in the case of biological weapons. The United Kingdom proposal itself provides for a different and somewhat more restrictive procedure on that aspect of the matter, requiring a decision by the Security Council to authorize the Secretary-General to conduct an investigation in each individual case. Furthermore, even if such an investigation were actually carried out, there would be the fundamental difficulty of establishing objective criteria to determine whether a specific case of the production or stockpiling of biological agents had a prophylactic purpose or a military purpose.

42. Compared with the case of chemical weapons, however, the difficulties in this respect may be more susceptible of solution so far as biological weapons are concerned. In the first instance, the kinds of pathogenic micro-organisms a country needs to produce for normal prophylactic purposes can usually be determined by the geographic

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and epidemiological conditions of that country plus, in some cases, the requirements for export of certain vaccines. For example, what country in the world has the need in peace time to produce in large amounts as materials for vaccines tularemia bacilli or Q-fever agent, both of which are capable of being powerful biological weapons?

43. Secondly, there is no need in the present-day vaccines industry to stockpile micro-organisms for a more or less extended period of time in either a live or a freeze-dried state, which would make them effective as weapons. Thus it would be possible to some extent to differentiate the biological agents produced for peaceful purposes and those produced for the purposes of warfare.

44. Unlike the production of biological agents, the production of chemical agents for weapons purposes could be so closely interrelated with the production of chemicals for peaceful purposes that it might be difficult in most cases to arrive at a universally-acceptable judgement on the purpose of a suspicious case. There can be no excuse, of course, for large-scale production and stockpiling of nerve gases or certain chemical end-products, such as mustard. But chemical agents such as phosgene and hydrogen cyanide are important intermediate products in peaceful chemical industry as well as powerful chemical agents for weapons purposes. As a practical problem, therefore, it would be difficult to control and interfere with the production of those chemicals. To make the matter more complicated, the production processes of chemical agents are integrated into the highly complex ramifications of the entire chemical industry. It might therefore be difficult to determine which stage of the complicated processes of production could actually be considered as the stage where weapons were being produced.

45. Despite such difficulties we cannot take the position that the examination of the question of chemical weapons should be postponed until such time as an agreement has been reached on the means of verification on all the aspects of their prohibition. To take such a position would mean separating the prohibition of chemical weapons from that of biological weapons.

46. As I suggested earlier, we will be able to apply the verification procedure prescribed in article III (1) of the United Kingdom draft convention to the use of chemical weapons. As to their production and stockpiling, we also have a keen desire to put a complete end to it. But at the same time there are difficulties I have already pointed out.

(Mr. Asakai, Japan)

47. I therefore should like to suggest that we entrust to a group of competent scientists and technologists, formed on an international basis, the study of the technical problems related to the verification of the production and stockpiling of chemical and biological weapons. I was told that the scientists of the International Institute for Peace and Conflict Research of Sweden (SIPRI) in Stockholm have just carried out such research, and there may be other studies of the same nature. I hope that the group I have suggested would work on the basis of these studies so that an agreement would be reached by this Committee as soon as possible on an appropriate means of such verification. In this connexion, the subject of verification might include the methods of stockpiling and ancillary equipment as well as agents themselves.

48. With reference to the question of the scope of the chemical agents to be prohibited, it may be necessary to work out more precisely the definition of the agents to be prohibited, as we intend not only to prohibit the use of chemical and biological weapons but also to prohibit their production and stockpiling. Let me recall that the Geneva Protocol of 1925 itself left some ambiguity about the scope of weapons it prohibited, particularly in relation to the harassing agents. In the case of the Geneva Protocol, however, it was only the use in war -- I emphasize "in war" -- of chemical and bacteriological weapons that was prohibited. As the representative of Sweden stated in this Committee on 5 August, "the military purpose makes this use [the use of harassing agents] very different from their use in domestic situations". (ENDC/PV.425, para. 35).

49. Although the Japanese Government has acceded to both the Hague Declaration of 1899 and the Convention on Land Warfare of 1907, it has not yet ratified the Geneva Protocol of 1925. Since the Geneva Protocol prohibits only the use in war of the weapons in question, without touching upon their production and stockpiling, and since different opinions exist as to the interpretation of its coverage, it is, in the view of my delegation, not a fully satisfactory international instrument. The Government of Japan hopes that an agreement to prohibit completely both chemical and biological weapons will be concluded at an early date, and my delegation intends to exert its utmost efforts to this end. It is our hope that we shall be able to co-operate with all the other delegations in this endeavour. If, however, we should find ourselves

(Mr. Asakai, Japan)

in the unfortunate situation that such an agreement cannot be concluded in the near future, my Government would be prepared to consider the ratification of the Geneva Protocol. We would do so as a manifestation of the earnest and strong desire of the people of Japan to eliminate these dreadful weapons completely from the earth.

50. Mr. EDELSTAM (Sweden): My delegation is today placing before the Committee a working paper of a technical nature describing a new seismological station recently inaugurated in Sweden which is intended to increase our knowledge in the field of monitoring underground explosions through seismological methods. I am referring to document ENDC/257, entitled "Working Paper describing the Hagfors Seismological Observatory in Sweden". As the matter of seismic test-ban control and the proposed organized seismological data exchange were dealt with in considerable detail during yesterday's informal meeting of the Committee, I can be brief in my explanations.

51. On 23 May the representative of Canada, Ambassador Ignatieff, introduced a working paper (ENDC/251) containing some practical suggestions for achieving an effective world-wide seismological data exchange. In paragraph 2 of that paper the Canadian delegation, inter alia, asked: "what seismic information would governments make available and in what form?". All members of the Committee who have spoken earlier on this issue have stated the view that the problem of verifying a treaty banning underground nuclear tests would be greatly facilitated if guaranteed access to original seismological data could be assured within the framework of an organized exchange of such data. This opinion has also been repeatedly endorsed by the United Nations General Assembly. I need only refer to the latest of its many resolutions on the comprehensive test ban, resolution 2455 (XXIII), where it is said that the General Assembly,

> "Recognizing the importance of seismology in the verification of the observance of a treaty banning underground nuclear weapon tests, ...
>
> "Expresses the hope that States will contribute to an effective international exchange of seismic data" (ENDC/237).

52. If no real progress can be made now on the basic problem itself, that is, the elaboration of a treaty banning underground nuclear weapon tests, the Committee should at least be able to agree on a plan for initiating the data exchange, which is, as we

(Mr. Edelstam, Sweden)

understand it, a non-controversial matter. I wish to repeat the recommendation made by my delegation in its statement in the Committee on 23 May that

> "... in our report to the General Assembly of the United Nations this matter should be more than briefly mentioned. It marks considerable progress towards laying the foundation for a comprehensive test ban treaty, and ought to be made visible to all United Nations delegations." (ENDC/PV.415, para. 29)

We have now before us the specific proposal made by the delegation of Canada to include in the Committee's report to the General Assembly the suggestion that countries should make available information as to which stations and what sort of seismological data they would be prepared to submit.

53. Summarizing, I wish to state that the purpose of the working paper which the Swedish delegation is putting forward today is to present in a technically valid manner a modest research station and at the same time to indicate the seismological data which this station can furnish to any interested party upon request. Further, we hope that other delegations will hand in similar papers. In such a way a beginning will already have been made towards organized international co-operation in this field.

54. Mr. CZARKOWSKI (Poland): On behalf of the Polish delegation I should like to welcome the new members of this Committee -- Argentina, Hungary, Morocco, the Netherlands, Pakistan and Yugoslavia. We are convinced that they will contribute constructively to the implementation of the tasks entrusted to us.

55. Our deliberations thus far have eloquently demonstrated considerable interest in the problem of ensuring strict and universal prohibition of the use of chemical and bacteriological weapons as well as in taking effective steps designed to eliminate those weapons from the arsenals of States. In this connexion various proposals have been submitted to this Committee.

56. On 22 July the Polish delegation presented a working paper (ENDC/256) concerning the report of the Secretary-General on chemical and bacteriological (biological) weapons and the effects of their possible use (A/7575). We have been gratified to find that the proposals contained in our working paper have been favourably received by many delegations around this conference table, and we owe them our thanks.

(Mr. Czarkowski, Poland)

57. The current debate in this Committee has reinforced our conviction that the Eighteen-Nation Committee on Disarmament should proceed according to the schedule adopted last year. After all, it was on the initiative of the Eighteen-Nation Committee on Disarmament that the General Assembly requested the Secretary-General to prepare, with the assistance of qualified expert consultants, a report on chemical and bacteriological (biological) weapons and the effects of their possible use (General Assembly resolution 2454 A (XXIII); ENDC/237). The report has been prepared in implementation of that resolution, which also recommended that the report be considered by our Committee and by other United Nations bodies.

58. All the delegations which have addressed the current session of the Eighteen-Nation Committee on Disarmament have assessed the study as an important contribution to the Committee's deliberations regarding those weapons. It has also met with considerable interest from world public opinion. We have not heard any arguments which sought to cast doubt on any of the thesis advanced in the study. Indeed it could hardly be otherwise, if one bears in mind that the report and its conclusions have behind them the prestige of the Secretary-General and of fourteen prominent scientists representing, as they did, all political and geographical regions of the world. It is obvious, therefore, that the report, as well as U Thant's recommendations, should be recognized by the Committee as a basis and a guideline for further disarmament negotiations concerned with chemical and bacteriological (biological) weapons.

59. To our mind it would not be proper for the Committee, in the further course of its disarmament negotiations, to leave the report of the Secretary-General in the background while concentrating on problems that we feel should be tackled at a later stage of our work. For this reason we consider that the establishment of the basic criteria to guide our future work in this Committee is an important stage that we cannot afford to abandon. In view of these considerations, and against the background of the discussion in our Committee, I should like to refer again to two criteria which my delegation considers to be basic to the undertaking of further steps in the field of chemical and bacteriological (biological) weapons.

60. First, any steps concerning chemical and bacteriological (biological) weapons should lead to the strengthening of the Geneva Protocol of 1925 (A/7575, p.117). I am glad to notice a consensus appearing in this Committee on the need for the universal

(Mr. Czarkowski, Poland)

observation of and adherence to the Protocol by the States not yet parties to it. This progress is significant because, notwithstanding two appeals by the General Assembly in its resolutions 2162 (XXI) (ENDC/185) and 2454 A (XXIII) and much urging by this Committee, there are many States, including certain big Powers, which have not yet seen fit to accede to the Protocol. In renewing our call to States not yet parties to accede to the Protocol we are discharging the obligation which devolves upon its signatories "to exert every effort to induce other States to accede to the present Protocol". The Polish delegation therefore supports the suggestion which the delegation of the Mongolian People's Republic made at our meeting on 31 July that the Committee issue an appeal to States not parties to the Protocol to sign and ratify that important international instrument before its forty-fifth anniversary -- that is, 17 June 1970 (ENDC/PV.424, para. 105).

61. Second, the problems of chemical and bacteriological (biological) weapons cannot but be considered jointly. I am gratified that a great number of delegations around this table share this point of view. Only today the representative of Japan has expressed a similar opinion. Many delegations, including my own, have stressed in their statements that there is a close and direct link between those weapons which makes them inseparable -- that in international law, strategic doctrine and the public mind all bacteriological (biological) weapons without exception are linked with chemical weapons. This link stems from the military and technical characteristics of those weapons, integrated in one system, and from the effects of their possible use as weapons of mass destruction. It is this consideration that accounts for the fact that, as was brought to our attention by the representative of Bulgaria at our meeting on 24 July, the term "biochemical weapons" is gaining currency in military vocabulary (ENDC/PV.422, paras. 16 et seq.).

62. Chemical and bacteriological weapons are dealt with jointly in the Geneva Protocol of 1925. We have not heard any convincing argument which would support the idea of dealing with further prohibition aimed at the complete elimination of these two types of weapons in any other way than in the Protocol. Moreover, it is not altogether irrelevant to observe in this connexion that all documents providing terms of reference for our work support joint consideration of chemical and bacteriological (biological) weapons. I have in mind first of all the Committee's agenda contained in its report

(Mr. Czarkowski, Poland)

of last August (ENDC/236, p.3), General Assembly resolution 2454 A (XXIII) concerning the preparation of the report, and the report itself, dated 1 July 1969, concerning chemical and bacteriological (biological) weapons and the effects of their possible use, together with U Thant's foreword containing his recommendations.

63. It is in the light of such general considerations that my delegation wishes to make several observations regarding the consequences which we feel would result from the United Kingdom's draft convention on the prohibition of biological weapons (ENDC/255). We have arrived at two principal conclusions in our assessment of that draft.

64. While its article VI states that nothing in the convention shall be construed as derogating in any way from obligations assumed by any State under the Geneva Protocol, the United Kingdom draft, to our mind, offers in fact a restrictive interpretation of the Protocol. This stems first of all from article I of the draft, which seeks to establish, independently of the existing prohibitions, a new legal prohibition of the use of biological weapons. In this way the United Kingdom reaffirms its earlier position that the Geneva Protocol of 1925 does not apply to biological weapons (ENDC/PV.381, paras. 87 et seq.).

65. The United Kingdom draft convention, moreover, argues for separate treatment of prohibition of the use of biological and of chemical weapons. It is a position that we cannot go along with for the reasons I have given and, first of all, because of the characteristic features of these weapons and the effects of their use.

66. In all considerations concerned with the establishment of further prohibitions in the field of chemical and bacteriological weapons -- namely, the prohibition of their development, production and stockpiling -- the ultimate goal has been to ensure total efficacy of the prohibition of use of these weapons as means of warfare by the elimination of the real possibilities and facilities making their use possible. The various kinds of prohibition are closely interrelated. Uniformity of prohibitions of the use of both chemical and bacteriological (biological) weapons requires uniformity of prohibitions applicable to the entire process of preparation for their use as well.

67. A partial solution, separate for each of the two types of weapons, could create a new factual and legal situation which, while far from guaranteeing progress towards elimination of the dangers resulting from biochemical weapons, would provide a deceptive illusion of progress and would affect adversely the effectiveness of the Geneva Protocol of 1925. The possible results of a selective approach to chemical and bacteriological (biological) weapons can be formulated in three points.

(Mr. Czarkowski, Poland)

68. First, in the military field, there would arise a new situation which would clearly favour a chemical arms race. So, instead of putting an end to such a race, it would be legalized for an unforeseeable period of time. Moreover, bearing in mind that military characteristics of chemical and bacteriological weapons constitute an integrated weapons system and that identical means of delivery can be used for both, there could arise a situation in which States might be tempted to compensate for their reduced arsenals of biological weapons by an increased effort in the field of chemical weapons. That corresponds to the weird logic of the arms race.

69. Secondly, there seems to be no doubt that a chaotic situation would emerge in the legal sense as separate prohibitions would appear with regard to particular weapons -- prohibitions whose scope, both subjective and objective, would not correspond to one another, creating as a result a mosaic of various legal régimes that would offer broad possibilities of arbitrary interpretation. Such a situation would hardly be conducive to strict and uniform observation of the prohibitions contained in the Geneva Protocol, let alone ensure universal adherence to it.

70. Any disarmament agreement, particularly one involving weapons of mass destruction, constitutes a milestone in the process of the development of international law. We believe, therefore, that the method suggested by the United Kingdom delegation can hardly be reconciled with the goal of codification and a progressive development of international law which not only seeks to supplant specific and concrete legal norms for general ones but also, at the same time, seeks unification of the activities of States in certain particularly important spheres of international relations.

71. Thirdly, to confine oneself in disarmament negotiations exclusively to biological weapons would hardly meet the hopes of the international community raised by such negotiations. World public opinion demands the elimination of the threat of chemical war with the same firmness as that of other barbarous methods of warfare. All of us are aware that public opinion has been particularly concerned over recent Press reports pointing to further intensification by certain States of the chemical arms race and the stockpiling of chemical weapons on foreign soil. The recent mishaps involving chemical weapons stockpiled on Okinawa have brought home to many peoples the danger involved in the stockpiling of chemical and bacteriological (biological) weapons on the territories of other States.

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72. I wish to stress at this juncture that my countrymen have been particularly alarmed at the reports, since officially confirmed, of the stockpiling of chemical weapons on the territory of the German Federal Republic. This fact, in addition to the vast stockpiles of nuclear weapons, creates an additional threat in this sensitive area of key importance to world peace. It certainly will not create a climate favourable to a strengthening of the sense of security of European nations. Public opinion in Poland -- and I am sure I speak for that in many other countries too -- firmly demands the immediate elimination of chemical and bacteriological (biological) weapons stockpiled on foreign soil.

73. We believe that in order to create an appropriate atmosphere for negotiations it is necessary for States to refrain from any action, whether in the military, political or legal sphere, which could undermine the effectiveness of the prohibitions contained in the Protocol and which, consequently, would adversely affect the possibilities of achieving further prohibitions relating to the development and stockpiling of chemical and bacteriological (biological) weapons.

74. In this connexion I should like to express my delegation's concern over the recent statement by the Secretary of Defense of the United States, Mr. Laird, who, as reported by the International Herald Tribune of 29 July (p.1, col.2), stated that "the United States must maintain a stock of chemical and biological warfare agents as a deterrent against that type of attack by other nations". The active promotion of the philosophy of not only nuclear but also chemical-bacteriological "balance of fear" justifying a further chemical and bacteriological arms race can hardly favour the work of the Eighteen-Nation Committee on Disarmament. We refuse to accept the proposition that international relations should be based on the principle of "balance of fear".

75. We cannot avoid mentioning also the attempts undertaken by certain circles in the United States to justify, in the eyes of the public opinion of that country, the need not only to retain existing stocks but also to proceed with the further development of chemical weapons. The old slogan "Learn to live with the nuclear bomb" is now being replaced by a new catch-phrase "Chemical warfare research is good for you".

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To support this, arguments are being advanced that there is a beneficial spin-off derived from chemical and bacteriological warfare research, a spin-off in the form of discoveries of new medicines.

76. Such actions can hardly be reconciled with the unanimous General Assembly resolution 2454 A (XXIII), which calls on governments to acquaint public opinion with the contents of the Secretary-General's report through various media of communication, and expresses a belief "that the people of the world should be made aware of the consequences of the use of chemical and bacteriological weapons". That is why we cannot go along with actions aimed at convincing public opinion that development of biological and chemical weapons results in benefits.

77. In presenting my remarks I am not motivated by a desire to infuse unnecessary polemics into our debate. We are first and foremost anxious to observe appropriate priorities in the work of this Committee. Those priorities are determined by the current state of the arms race as well as by the scope of the threat resulting from the particular forms of armaments. This applies especially to weapons of mass destruction. The specific feature of those weapons means that mankind is threatened not only by the prospect of their use. In fact the very arms race in these weapons, qualitative, quantitative and territorial, triggers off a number of adverse political, economic and moral consequences affecting the whole international community, while at the same time posing the constant threat of the outbreak of a devastating conflict.

78. There is, of course, little need to mention the state of permanent threat to man's health resulting from those weapons. The dangers inherent in the chemical arms race have been made all too clear in various parts of the Secretary-General's report. Thus it states that -

> "... the preparation of an armoury of chemical and bacteriological (biological) weapons would constitute a possible danger to people in the vicinity of production, storage and testing facilities." (A/7575, para. 355),

while later on in the report it is observed that the existence of chemical and bacteriological weapons -

(Mr. Czarkowski, Poland)

"... contributes to international tension without compensating military advantages. They generate a sense of insecurity not only in countries which might be potentially belligerent, but also in those which are not." (ibid., para. 369)

79. Bearing in mind the factors I have mentioned, the Polish delegation wishes again to place on record its readiness to co-operate with any delegation with a view to elaborating specific measures that would ensure strict and universal observance of the prohibitions contained in the Geneva Protocol, and subsequently the total elimination of chemical and bacteriological (biological) weapons from the arsenals of States.

80. Finally I should like to assure this Committee that we are working actively, together with other interested countries, towards achieving the early and comprehensive prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons.

81. Mr. PORTER (United Kingdom): I should like first to express a warm welcome on behalf of my delegation to the six new delegations, those of Argentina, Hungary, Morocco, the Netherlands, Pakistan and Yugoslavia, which have joined the Committee since we last spoke in formal session. I personally am particularly pleased to see with us here Ambassador Eschauzier of the Netherlands and Ambassador Shahi of Pakistan, with whom I have had the privilege of working closely in the past.

82. My statement today will take the form of a brief introduction to the working paper already circulated by my delegation as document ENDC/258, which deals with United Kingdom research on techniques for distinguishing between earthquakes and underground explosions. We have had some useful exchanges this year on the question of a comprehensive test-ban treaty, and for that we are indebted chiefly to the delegations of Sweden and Canada. The Swedish working paper submitted on 1 April (ENDC/242) contained some valuable suggestions which should be kept in mind in future work on this subject. I shall return later to the Canadian proposal of 23 May contained in document ENDC/251.

83. My own contribution today will be confined to the technical aspects of detection and identification of tests by seismic means. The United Kingdom has devoted much effort to this problem. In 1965 the work of United Kingdom scientists was described

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to this Committee in a working paper (ENDC/155); and we thought it would be useful to prepare another paper on similar lines to summarize the advances made since that date. Some of the material will already be familiar to the Committee from the report of the SIPRI group (ENDC/230), to which United Kingdom scientists contributed; but the working paper does include as an annex a bibliography of publications describing the United Kingdom work. That will complement the valuable list of papers by Canadian scientists in document ENDC/248. Many of the references listed in our paper will, of course, be known to scientists working in this field in other countries; but we thought that a comprehensive bibliography would be useful. The number and titles of papers listed gives some idea of the range of subjects involved and the complexity of the investigations.

84. In the four years since our previous working paper was produced we have seen the acceptance of a new method of positively identifying explosions: that using measurement of surface waves. This is now familiar to us all from the report of the SIPRI group, which made full use of the results obtained by United Kingdom scientists described in the paper submitted today. While recognizing the advances made, we should be on our guard against believing that all the problems associated with the detection and identification of seismic events have been solved with the introduction of that method. The investigations described in today's working paper show that, even with a combination of methods, the nature of events detected below a certain magnitude will remain uncertain.

85. Against that background I should now like to turn to the possibility of improving our detection and identification capability by improving the international exchange of seismic data. We have already in the Worldwide Standard Seismological Network a network of high quality which provides services at very modest cost. Information derived from that network was essential in enabling United Kingdom scientists to do the work described in our paper. Nevertheless we feel, as Mr. Mulley said on 17 April, that

> "We plainly have some way to go before it can be said that adequate international machinery exists to enable States to assure themselves that the best possible use could speedily be made of seismic data obtained throughout the world" (ENDC/PV.404, para. 15).

The contribution of the Worldwide Standard Seismological Network could be improved if other national networks could be integrated with it, as I understand the Canadian national network already is; or, if that is not a practical suggestion on a world-wide scale, if information from other networks were readily available on request.

(Mr. Porter, United Kingdom)

86. The Canadian delegation suggested in its working paper of 23 May that States should communicate to the Secretary-General of the United Nations, for transmission to the Eighteen-Nation Committee on Disarmament, a list of stations from which they would be prepared to supply seismic records on the basis of guaranteed availability. A good response to that suggestion would enable us to see just what further information might become available, and from that to estimate what degree of improvement that might bring. My Government is willing to provide the information that would be requested in accordance with the Canadian proposal; and we very much hope that the proposal will be acceptable to other members of this Committee.

87. The next step would be to consider how best to handle the information that became available. Should we rely on bilateral exchange of records, or should we build a system of exchange on the centres already existing? How would we set up the most effective cross-links between participants? How would we standardize operating procedures sufficiently to make records compatible with one another? What extra resources would be necessary? Would it be necessary to process all records, or could some selection be practised? Those are all questions which must be considered before progress in this field can be achieved. They are also, it seems to us, the type of question the representative of Japan had in mind when making his recent thoughtful contribution to the discussion of this subject (ENDC/PV.424).

88. I must, however, make clear that in our view the systems we have at present are unlikely to provide an identification threshold at teleseismic distances much, if at all, lower than the 20-60 kilotons agreed on by the SIPRI group. An improved exchange of data might help us to achieve the best results possible with the existing networks, but it is unlikely to enable us to lower significantly the identification threshold. A better performance could be achieved with greater certainty only by a more costly decision to improve the instrumentation of the existing stations, or better, we believe, by setting up new stations based on the latest techniques.

89. Even if we were to establish the best possible seismic network that we can at present envisage and to achieve the full capabilities of detection and identification foreseen by the SIPRI group, further problems would still remain. One such problem recognized by the SIPRI group was the possibility of reducing the apparent magnitude

(Mr. Porter, United Kingdom)

of an explosion by carrying it out in a suitable thickness of dry alluvium. Alluvium is likely to be present in most continents in thicknesses sufficient to de-couple explosions up to twenty kilotons. On present knowledge, therefore, it is unlikely to be possible by seismic means to achieve from recordings made at great distances a high probability of detecting explosions as large as ten kilotons if fired in dry alluvium. The probability of identifying them would be lower still.

The Conference decided to issue the following communiqué:

"The Conference of the Eighteen-Nation Committee on Disarmament today held its 428th plenary meeting in the Palais des Nations, Geneva, under the chairmanship of H.E. Ambassador James F. Leonard, representative of the United States.

"Statements were made by the representatives of India, Japan, Sweden, Poland and the United Kingdom.

"The representative of Sweden submitted a working paper describing the Hagfors Seismological Observatory in Sweden (ENDC/257).

"The representative of the United Kingdom submitted a document containing further notes on the United Kingdom research on techniques for distinguishing between earthquakes and underground explosions (ENDC/258).

"The representative of Canada submitted a document containing remarks by H.E. Ambassador George Ignatieff, representative of Canada, and by Dr. K. Whitman at the informal meeting on a complete test ban on Wednesday, 13 August 1969 (ENDC/259).

"The representative of Japan submitted a document containing the statement by H.E. Ambassador K. Asakai at the informal meeting of the Eighteen-Nation Committee on Disarmament on 13 August 1969 (ENDC/260).

"The representative of India submitted a document containing the statement by H.E. Ambassador M.A. Husain at the informal meeting of the Eighteen-Nation Committee on Disarmament on 13 August 1969 to consider the question of a comprehensive nuclear test ban (ENDC/261).

"The next meeting of the Conference will be held on Tuesday, 19 August 1969, at 10.30 a.m."

The meeting rose at 12.15 p.m.